Space Weather Forecast

Issued on Tuesday, 13 September 2022 at 13:25 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Chance of G1/Minor Storms days 2 and 4 (14th and 16th). Moderate class flares considered likely.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate, with a single moderate class flare observed at 12/2345 UTC. There are six sunspots on the disk, of which AR3098 in the northwest quadrant remains the largest and most complex spot. There is also a large sunspot, AR3102, which has recently rotated onto the southeast limb which may turn out to be a significant region. No Earth-directed CMEs were observed in available imagery.
Solar Wind / Geomagnetic Activity: The solar wind speed has followed a declining trend, with winds at background levels. The total magnetic field strength was also weak. Geomagnetic activity was Quiet.
Energetic Particles / Solar Radiation: The high energy proton flux has slowly eased towards background levels.

Four-Day Space Weather Forecast Summary

Solar Activity: Moderate levels of solar activity are considered likely with a very slight chance of reaching Strong levels.
Solar Wind / Geomagnetic Activity: A coronal mass ejection which was observed leaving the Sun on 11 September may arrive at Earth on 13 or 14 September, although confidence is low. A fast wind from a negative coronal hole may connect with Earth later on day 4 (16th). Geomagnetic activity is forecast to be mainly Quiet to Unsettled through the period, with Active intervals likely and a chance of G1/Minor Storms day 2 (14th) and day 4 (16th), although the forecast is low confidence.
Energetic Particles / Solar Radiation: No solar radiation storms are expected.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

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Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	20	30	10	30
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	No	60	60	60	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

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